UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/557,835 | 11/21/2005 | Daniel Rossier | 279890US2PCT | 6654 |

22850 7590 06/30/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

| EXAMINER | |
|---|---|
| WYLLIE, CHRISTOPHER T | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2619 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 06/30/2008 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/557,835 | ROSSIER ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTOPHER T. WYLLIE | 2619 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *19-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-22,24,29-32 and 34* is/are rejected.

7)☐ Claim(s) *23,25-28,33,35 and 36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/21/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED OFFICE ACTION

1. Claims 19-36 are pending in Application 10/557,835. Claims 1-18 have been cancelled.

### *Claim Objections*

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 32 should be renumbered as claim 33.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 19-20 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kibria et al. (GB 2 308 789) in view of Andersson et al. (US 5,530,917).

Regarding claim 19, Kibria et al. discloses a computer-based system for dynamic assignment of carrier frequencies to computerized access points of a wireless local area network, comprising a communication module for connection of the computer based system **(see Figure 1, FSM 112)** via a communication connection **(see Figure 1, MSC 106)** to the computerized access points **(see Figure 1, RBS 103 [the FSM is connected to the Radio Base Stations via the Mobile Switching Center])**; a memory module for storing access point data about the computerized access points, which the access point data comprises a carrier frequency of the respective computerized access point **(p. 12, lines 8-11 and p. 9, lines 3-6 [the FSM contains a memory unit 204 that stores data received from the MSC, the data that the MSC sends includes the channels assigned to each RBS which inexplicitly includes the carrier frequency**

**for each channel])**; an optimization module for determining a carrier frequency for a first of the computerized access points, based on stored access point data about the computerized access point **(p. 15, lines 6-11 [the FSM determines that a channel should be de-allocated from one RBS and allocated to another RBS based on the stored data])**; a channel switching module for setting the determined carrier frequency in the first computerized access point via the communication connection **(p15, lines 10-13 [the FSM determines that a channel should be de-allocated and reallocated to another RBS and sends out a reconfiguration command to the MSC, which in turn takes appropriate action to reconfigure the RBS's])**; a means for calculating weighting factors for the computerized access points, each based on captured operational values of the of the respective computerized access point **(p. 11, lines 11-13 and p. 9, lines 7-17 [the FSM receives information from the MSC and process the information and makes a decision based on the information, the information such as the blocking rate of an RBS, the dropped call of an RBS, a failure rate of an RBS and a bit error rate of each channel assigned to an RBS])**; the memory module is configured to store access point data comprising the calculated weight factors of the computerized access point **(p. 12, lines 8-11 and p. 9, lines 3-6 [the FSM contains a memory unit 204 that stores data received from the MSC])**; the optimization module is configured to determine the carrier frequency for a first computerized access point from among a multiplicity of defined radio frequency channels **(p. 15, lines 6-11 [the FSM determines that a channel should be de-allocated from one RBS and allocated to another RBS based on the stored data])**.

Kibria et al. do not disclose that one radio frequency channel with an assigned carrier frequency is selected such that the sum of the differences between the assigned carrier frequency and the stored preset carrier frequencies of the second computerized access point is as large as possible, the differences being weighted in each case using stored weighting factor for the respective second computerized access point. However, Andersson et al. discloses such a feature **(see abstract, lines 1-17 [the system compares a first load value that is computed and compared with the total load values of alternatives channels and the channel with the most favorable load value is selected based on the comparison])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Andersson et al. into the system of Kibria et al. The method of Andersson et al. can be implemented by enabling the FSM to determine a selectable channel based on a load value comparison with each RBS. The motivation for this is to balance the load of the system.

Regarding claim 20, Kibria et al. further discloses a monitoring module for capturing present operation values of the first computerized access point via the communication connection **(p. 9, lines 3-4 an d p. 12, lines 8-9 the memory unit "captures" the stored performance information from the MSC])**.

Regarding claim 29, Kibria et al. discloses a computer-readable medium with computer program code means contained therein for control of one or more processors of a computer-based system for dynamic assignment of carrier frequencies to computerized access points of a wireless local area network that are connectible to the

computer-based system **(see Figure 1, FSM 112)** via a communication connection **(see Figure 1, RBS 103 and MSC 106 [the FSM is connected to the Radio Base Stations via the Mobile Switching Center])** such that: access point data about the computerized access points are stored in the computer-based system, which access point data each comprises at least a present carrier frequency of the respective computerized access point **(p. 12, lines 8-11 and p. 9, lines 3-6 [the FSM contains a memory unit 204 that stores data received from the MSC, the data that the MSC sends includes the channels assigned to each RBS which inexplicitly includes the carrier frequency for each channel])**, a carrier frequency for a first of the computerized access points is determined by the computer-based system, based on the stored access point data about the computerized access points **(p. 15, lines 6-11 [the FSM determines that a channel should be de-allocated from one RBS and allocated to another RBS based on the stored data])**, and the determined carrier frequency is set in the first computerized access point by the computer-based system via the communication connection **(p15, lines 10-13 [the FSM determines that a channel should be de-allocated and reallocated to another RBS and sends out a reconfiguration command to the MSC, which in turn takes appropriate action to reconfigure the RBS's])**, wherein the computer program product comprises further computer program code means which control the processors of the computer-based system such that: a weighting factor is calculated by the computer-based system for the computerized access points based in each case on captured operational values of the respective computerized access point **(p. 11, lines 11-13 and p. 9, lines 7-17 [the FSM**

**receives information from the MSC and process the information and makes a decision based on the information, the information such as the blocking rate of an RBS, the dropped call of an RBS, a failure rate of an RBS and a bit error rate of each channel assigned to an RBS])**, access point data are stored in the computer-based system which comprise the calculated weighting factors of the computerized access points **(p. 12, lines 8-11 and p. 9, lines 3-6 [the FSM contains a memory unit 204 that stores data received from the MSC])**, and the carrier frequency for the first computerized access point is determined by the computer-based system from among a multiplicity of defined radio frequency channels **(p. 15, lines 6-11 [the FSM determines that a channel should be de-allocated from one RBS and allocated to another RBS based on the stored data])**. Kibria does not disclose one radio frequency channel with an assigned carrier frequency is selected such that the sum of the differences between the assigned carrier frequency and the stored present carrier frequencies of the second computerized access points is as large as possible, the differences being weighted in each case using the stored weighting factor for the respective second computerized access point. However, Andersson et al. discloses such a feature **(see abstract, lines 1-17 [the system compares a first load value that is computed and compared with the total load values of alternatives channels and the channel with the most favorable load value is selected based on the comparison])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Andersson et al. into the

system of Kibria et al. The method of Andersson et al. can be implemented by enabling the FSM to determine a selectable channel based on a load value comparison with each RBS. The motivation for this is to balance the load of the system.

Regarding claim 30, Kibria further discloses a computer program code means that control the processors of the computer-based system such that present operational values of the first computerized access point are captured by the computer-based system via the communication connection **(p. 9, lines 3-4 an d p. 12, lines 8-9 the memory unit "captures" the stored performance information from the MSC])**.

5. Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kibria et al. (GB 2 308 789) in view of Andersson et al. (US 5,530,917) as applied to claim 19 and 29 above, and further in view of Carney (WO 95/32591).

Regarding claim 21, Kibria et al further teaches that the means for calculating weighting factors is configured to calculate the weighting factor based on a failure rate for the first computerized access point **(p. 11, lines 11-13 and p. 9, lines 7-17 [the FSM receives information from the MSC and process the information and makes a decision based on the information, the information such as a failure rate of an RBS])**. The references as applied above do not disclose a weight factor based on a use rate and use probability. However, Carney discloses such a feature **(see abstract, lines 12-24 and 26-28 [the controller selects a channel based on a table that contains usage rates and my also pre-allocate a channel based on expected use, to determine expected use the controller accumulates the channel usage**

**information over a number of predetermined periods of time and determines a pattern of use])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Carney into the system of the references as applied above. The method of Carney can be implemented by enabling the FSM to allocate and de-allocate channels based on a usage rate and an expected use. The motivation for this is to create a more efficient system by allocating resources where needed and reducing resources where demand is low.

Regarding claim 31, Kibria et al further teaches that the weighting factor for the first computerized access point is calculated by the computer-based system based on a failure rate for the first computerized access point **(p. 11, lines 11-13 and p. 9, lines 7-17 [the FSM receives information from the MSC and process the information and makes a decision based on the information, the information such as a failure rate of an RBS])**. The references as applied above do not disclose a weight factor based on a use rate and use probability. However, Carney discloses such a feature **(see abstract, lines 12-24 and 26-28 [the controller selects a channel based on a table that contains usage rates and my also pre-allocate a channel based on expected use, to determine expected use the controller accumulates the channel usage information over a number of predetermined periods of time and determines a pattern of use])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Carney into the system of the

references as applied above. The method of Carney can be implemented by enabling the FSM to allocate and de-allocate channels based on a usage rate and an expected use. The motivation for this is to create a more efficient system by allocating resources where needed and reducing resources where demand is low.

6. Claims 22 and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Kibria et al. (GB 2 308 789) in view of Andersson et al. (US 5,530,917) as applied to claim 20 and 29 above, and further in view of Kostic et al. (US 2003/0134642) in view of Cervello et al. (US 2002/0060995).

Regarding claim 22, the references as applied above disclose all the claimed subject matter recited claim 20, but do not disclose that the monitoring module is configured to capture a present operational value of the first computerized access point indicating a present number of users who are associated with the access point. However, Kostic et al. discloses such a feature **(paragraph 20, lines 1-5 and 8-10 [factors such as the number of associated mobile stations can determine whether an access point should accept an addition association])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kostic et al. into the system of the references as applied above. The method of Kostic et al. can be implemented by enabling the MSC to monitor the number of associated mobile stations of an RSB and forward that information to the FSM to determine whether a channel should be allocated

or de-allocated. The motivation for this is to create a system that can dynamically allocate resources as needed.

The references as applied above do not disclose capturing a present operation value received faulty data packets at the access point and a present value of received errorless data packets at the access point. However, Cervello et al. discloses such a feature **(paragraph 0036, lines 21-27 [PER (packet error rate) can be measured from frame reception statistics which define the number of frames received and the number of frames in error])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the method of Cervello et al. into the system of the references as applied above. The method of Cervello et al. can be implemented by enabling the MSC to monitor the packet error rate of an RSB and forward that information to the FSM to determine whether a channel should be allocated or de-allocated. The motivation for this is to create a system that can dynamically allocate resources as needed.

Regarding claim 32, the references as applied above disclose all the claimed subject matter recited claim 29, but do not disclose that the computer-based system captures a value indicating a present number of users who are associated with the first computerized access point. However, Kostic et al. discloses such a feature **(paragraph 20, lines 1-5 and 8-10 [factors such as the number of associated mobile stations can determine whether an access point should accept an addition association])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Kostic et al. into the system of the references as applied above. The method of Kostic et al. can be implemented by enabling the MSC to monitor the number of associated mobile stations of an RSB and forward that information to the FSM to determine whether a channel should be allocated or de-allocated. The motivation for this is to create a system that can dynamically allocate resources as needed.

The references as applied above do not disclose capturing a present operation value received faulty data packets at the access point and a present value of received errorless data packets at the access point. However, Cervello et al. discloses such a feature **(paragraph 0036, lines 21-27 [PER (packet error rate) can be measured from frame reception statistics which define the number of frames received and the number of frames in error])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the method of Cervello et al. into the system of the references as applied above. The method of Cervello et al. can be implemented by enabling the MSC to monitor the packet error rate of an RSB and forward that information to the FSM to determine whether a channel should be allocated or de-allocated. The motivation for this is to create a system that can dynamically allocate resources as needed.

7. Claims 24 and 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kibria et al. (GB 2 308 789) in view of Andersson et al. (US 5,530,917) as applied to claim 19 and 29 above, and further in view of Billhartz (US 6,894,985).

Regarding claim 24, Kibria further discloses activating the optimization module for determining the carrier frequency at the first access point when a captured present value indicates that the a present number of users who are associated with the access point is zero. **(p. 15, lines 6-11 and p. 9, lines 7-17 [the FSM receives information from the MSC and processes the information and makes a decision based on the information, the information such as Out of Service statistics, if a channel is out of service there are no connected users])**. The references as applied above do not teach that a present number of received faulty data packets at the access point exceeds a defined tolerance value to activate the optimization module. However, Billhartz disclosed such a feature **(column 6, lines 61-67 [link quality is base on packet error rate and a discovery of a new channel is based on a comparison of present link quality and a threshold link quality])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Billhartz into the system of the references as applied above. The method of Billhartz can be implemented by enabling the FSM to allocate or de-allocate a channel based on a comparison of a present link quality and a threshold link quality. The motivation for this is to distribute resources throughout the network before the network reaches a critical level.

Regarding claim 34, Kibria further discloses the computer-based system carries out the determination of the carrier frequency of the first computerized access point if captured present operational values of the first computerized access point indicate that a present number of users who are associated with the first computerized access point is zero **(p. 15, lines 6-11 and p. 9, lines 7-17 [the FSM receives information from the MSC and processes the information and makes a decision based on the information, the information such as Out of Service statistics, if a channel is out of service there are no connected users])**. The references as applied above do not teach that a present number of received faulty data packets at the access point exceeds a defined tolerance value to activate the optimization module. However, Billhartz disclosed such a feature **(column 6, lines 61-67 [link quality is base on packet error rate and a discovery of a new channel is based on a comparison of present link quality and a threshold link quality])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Billhartz into the system of the references as applied above. The method of Billhartz can be implemented by enabling the FSM to allocate or de-allocate a channel based on a comparison of a present link quality and a threshold link quality. The motivation for this is to distribute resources throughout the network before the network reaches a critical level.

***Claim Objections***

8. Claims 23, 25-28, 33, and 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure are Kibria et al. (US 6,584,175), Syrjärinne (US 6,584,175) and Kumar et al. (US 6,434,367).

Specifically regarding claims 25 and 35, Kibria et al. (GB 2 308 789) discloses a first autonomous agent module, which is assigned to the first computerized access point; and second autonomous agent modules, which are each respectively assigned to one of the second computerized access points **(see Figure 1, RCDC's 114 and p. 8 lines 11-13 [the RCDC's are positioned within the geographic service areas of the wire less communication system])** and configured to exchange access point data comprising access point identification, a present carrier frequency, and a present carrier frequency and a calculated weighting factor of the assigned computerized access point **(p. 11, line 11-13 and p. 9, lines 5-6 and lines 16-17 [the RCDC's report the performance of channels assigned to each RBS, therefore a channel is specifically assigned to an RBS which is form of identification sent to the FSM, the channels assigned inexplicitly define a carrier frequency for each channel of the RBS, and the weighting factor such as the bit error rate statistics of each**

**channel assigned to each RBS])**. Kibria et al. (US 6,584,175) discloses the two autonomous comprise a monitoring module **(column 3, lines 28-32 [the microprocessor is connected to a dual band scanning receiver/transmitter])**, a memory module **(column 3, lines 32-34 [the microprocessor is connected to a non-volatile storage device which is used to store data])**, means for calculating weighting factors **(column 3, lines 13-16 [the channel measurement device is controlled by the microprocessor and executes instructions stored in the ROM])**, and an update module, which update module is configured to exchange the access point data about the assigned computerized access point among the agent modules **(see column 5, lines 18-25 [the microprocessor controls the transfer of data by reading the data stored from the non-volatile storage device and sending it to the remote processor])**, wherein the agent modules are each configured to activate the monitoring module of the respective agent module periodically to capture present operational values in the associated computerized access point **(column 4, 57-63 [each channel is measured for time intervals defined by the cycle period parameter])**.

However, neither reference discloses that the agent modules are each configured to activate the update module of the respective agent module for the exchange of the access point data after a determined carrier frequency has been set by the channel switching module of the respective agent module in the associated computerized access point. Also, neither reference provides a reason to incorporate an

optimization module and a channel switching module in the RCDC's, since those function are being performed by the FSM of the GB 2 308 789 application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER T. WYLLIE whose telephone number is (571) 270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher T. Wyllie/
Examiner, Art Unit 2619

/CTW/
Examiner, Art Unit 2619

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619